THE AUSTRALIAN PLANT DISEASE RECORDER.

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Edited by:

K.E. Hutton, Biological Branch,
Department of Agriculture,
Box 36, G.P.O., Sydney.

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For private circulation to plant pathologists within Australia.

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# PLANT DISEASE NOTES.

## FIELD AND FODDER CROPS.

### PASTURE DISEASES IN TASMANIA:

Little attention has been given to diseases of pasture in Tasmania but this season they have been more in evidence than usual.

The most widespread trouble has been rust in rye grass. While this occurs every year it has been more severe than usual this autumn and has badly damaged many pastures throughout the State. The main organism involved is *Puccinia coronata* var. *lolii*. Nothing is yet known about the strains present here.

*Corticium fuciforme* was widespread in the Launceston area, occurring chiefly in poorly managed, unthrifty pastures.

*Physarum cinereum* suddenly appeared on pastures throughout the whole northern and north-western regions early in June. Its appearance followed a period of wet and comparatively warm weather. In some cases the smothering effect of the organism caused appreciable damage of a temporary nature.

The most widespread clover disease continues to be *Pseudoplea trifolii*, which occurs throughout the State but is particularly prevalent in the north-west coast region. *Pseudopeziza trifolii* has been recorded on red clover in several districts of the north-west coast. One case of *Sclerotinia* (?) *trifoliorum* on white clover was recorded from the Deloraine district. The organism occurred throughout the effected pasture and caused considerable damage.

A crown rot of red clover in a pasture in the Devonport district was found to be associated with a species of *Stagonospora*. The literature records *Leptosphaeria pratensis*, of which *Stagonospora meliloti* is the conidial stage, as a cause of crown rot in a number of pasture legume species.

It is felt that diseases cause more damage to pasture than is generally realised, and that although this season has focussed attention on them they probably are quite important in all seasons.

Department of Agriculture,
Hobart.

- G. C. WADE.

MOSAIC OF SUBTERRANEAN CLOVER.

Sap inoculations were made recently from two subterranean clover (Trifolium subterraneum) plants showing stunting and a conspicuous dark and yellowish green mosaic on the leaves. Symptoms produced on beans (Phascolus vulgaris) were typical of yellow mosaic. Infections were positive on garden pea, Melilotus alba, Trifolium hybridum, T. incarnatum, T. subcrraneum (Bacchus marsh), Lupinus varius, L. angustifolius, L. albus and L. luteus. The symptoms on lupins were similar to those described for pea mosaic (Norris, C.S.I.R. Bull. 170). Yellow mosaic has been recorded previously in Western Australia on beans only, but its occurrence in the field on commonly grown varieties of subterranean clover and lupins will be investigated.

Department of Agriculture,
Perth.

- H.L. Harvey.

VEGETABLES.

BEAN SEED CERTIFICATION SCHEME, 1953-1954:

During the 1953-54 season in New South Wales, fifty-three bean crops on 232 acres were passed for certification, applications having been lodged for an initial 321½ acres. It is estimated that the total yield of certified seed will be 3,940 bushels, made up of 2,660 bushels (67.5%) of Brown Beauty, 440 bush. of Wellington Wonder, 340 bush of Windsor Longpod, 260 bush. of Tweed Wonder, 130 bush. of Hawkesbury Wonder and smaller quantities of the varieties Clarendon Wonder, Goward's Special and Richmond Wonder. Seventeen crops were rejected, one for the presence of anthracnose, one because of a severe scald condition and fifteen for having been picked as green beans.

The performance of the Vickery strain of Brown Beauty was outstanding both from the point of view of anthracnose resistance and yielding capacity. No anthracnose has been found in crops of this line on the South Coast and it now appears to be 100% resistant to strain 1. In green beans, it yielded up to 300 bush. per acre over three pickings and its yield of seed should also be well up to standard.

Department of Agriculture,
Sydney.

- J. WALKER.

BEAN RUST:

References have been made recently to the occurrence of rust (Uromyces phaseoli typica) on the hitherto rust resistant Westralia runner bean at Hawkesbury Agricultural College, Richmond, N.S.W. (A.P.D.R., 6:1:6, 1954 and Agric. Gaz. N.S.W., 65:2:101, 1954). This outbreak was attributed to the development of a new rust race.

Plants raised from seed of the Richmond line of Westralia proved very susceptible to local collections of bean rust, but plants from certified Westralia seed produced in this State proved highly resistant to the disease. It is obvious therefore that the Richmond line of Westralia was not true to name.

Subsequently tests were conducted in N.S.W. and similar results obtained, according to a letter received from Dr.C.J. Magee. Although the appearance of a new rust race is always to be feared, the Westralia variety apparently still maintains resistance to all known Australian races.

In Western Australia, because of the high rust hazard, the variety is grown almost exclusively in the autumn months by market gardeners near Perth and in winter by bean growers at Carnarvon.

According to reports, the variety has also proved rust resistant in New Zealand and Rhodesia, where it is being increasingly grown.

Department of Agriculture,
Perth. - W.P. CASSSMITH.

BEAN RUST:

Since the initial report (A.P.D.R. 6: 1: 6, 1954) of rust on the bean variety Westralia at Hawkesbury Agricultural College, Richmond, inoculation tests have been carried out, using the Richmond rust isolate, on Westralia obtained from various sources. The results show that, whilst the line of beans from Richmond is fully susceptible to rust attack, Westralia from other sources is quite resistant. It would thus appear that the plants growing at Richmond were not Westralia and that this variety is still highly resistant to bean rust.

Department of Agriculture,
Sydney. - J. WALKER.

BEAN VIRUS 1 ON PHASEOLUS LATHYROIDES:

Specimens of this legume received from the C.S.I.R.O. Cooper Pasture Research Laboratory at Lawes during the autumn of 1953 were found to be infected with common bean mosaic.

No differences in symptom expression or host range could be detected on differential Brown Beauty strains inoculated with the P. lathyroides culture and with a stock culture of bean virus 1 in glasshouse tests. Healthy plants of P. lathyroides, when inoculated with bean virus 1 from diseased bean (P. vulgaris) seedlings raised from infected seed, developed symptoms identical with those of the original specimens.

Department of Agriculture - J.C. JOHNSON.
Brisbane.

TOP NECROSIS AND WILT OF BROAD BEAN:

In their recent note on virus isolates from pea and broad bean, D.J. Goodchild and N.H. White (A.P.D.R. 5:4:42-43, 1953) reported various differences in symptoms and host range from the disease described by the writer (J.Vic. Dep. Agric. 45: 323-332, 1947). Failure to infect tobacco and Nicotiana glutinosa were the principal differences.

The writer also experienced difficulty in infecting these species. A perusal of experimental records has revealed that infections were not recorded on tobacco or N. glutinosa inoculated in a heated glasshouse during August and September, 1945 and 1946. However, infections occurred consistently on both species inoculated under high temperature conditions during the months January to March.

The possible significance of these results were not apparent to the writer at that time. It would appear, however, that high air temperature may have broken down the resistance of these species to infection with the broad bean virus. This phenomenon was reported for the cucumber mosaic resistant variety of spinach, Virginia Savoy, which was susceptible to infection at an air temperature of 28°C (Phytopathology, 42: 301-306, 1952). Similar results were obtained at Burnley, in 1953, with a U.S.D.A. spinach accession field immune to the local strain of cucumber mosaic virus.

In the case of the broad bean virus it is also of interest to note, in view of the recent report by Matthews on the relationship between local lesion production and time of day of inoculation (Ann. appl. Biol. 40: 377-383, 1953), that the

most severe symptoms were recorded on N. glutinosa plants inoculated at approximately 4 p.m. in January, 1945.

Department of Agriculture, Melbourne. - L.L. STUBBS.

YELLOW BEAN MOSAIC AND PEA MOSAIC:

From the results of sap transmissions to the indicator plants shown in table A, it was possible to determine the viruses causing mosaic diseases of legume hosts in the Sydney area, in particular the strains of yellow bean mosaic and of pea mosaic. The literature is confused regarding the differences between these two viruses but it is generally conceded that pea mosaic is incapable of transmission to beans.

TABLE A.

| Host | Virus | | | |
|---|---|---|---|---|
| | Yellow Bean Mosaic | | Pea Mosaic | |
| | Strain 1 | Strain 2 | Strain 1 | Strain 2 |
| Bean var. Canadian Wonder | + | + | - | - |
| Pea var. Greenfeast | + | + | + | + |
| Red Clover | - | + | - | + |
| Crimson Clover | + | + | + | + |
| Broad Bean | + | + | + | + |

+ = Mosaic symptoms - = No symptoms

No symptoms on Datura stramonium, Nicotiana tabacum or Nicotiana glutinosa

The reactions of the viruses on the differential hosts, in particular bean, red clover and crimson clover, indicate the presence of 2 strains of yellow bean mosaic and 2 strains of pea mosaic. Strain 1 of yellow bean mosaic is similar, in

many respects, to the type strain of Grogan and Walker (Phytopathology, 38: 489, 1948) while strain 2 is similar to the yellow bean mosaic of Pierce (Phytopathology, 24: 87 - 115, 1934) and to the sub. clover mosaic of Aitken and Grieve (J. Aust. Inst. agric. Sci., 9: 81 - 82, 1943).

Strain 1 of pea mosaic conforms in host range to that reported by Stubbs (Phytopathology, 27: 242 -266, 1937) and by Chaudhuri (Ann. app. Biol., 37: 342 - 354, 1950). The second strain of pea mosaic is similar in host range to that reported by Murphy and Pierce (Phytopathology, 27: 710 - 721, 1937).

Faculty of Agriculture,
University of Sydney. - D.J. GOODCHILD.

APHANOMYCES ROOT ROT OF PEAS:

Widespread failures of grey and blue peas occurred in Northern Tasmania this season, with the heaviest losses in the Cressy and Longford areas. No attempt was made to estimate the losses accurately but well over a thousand acres were affected and several crops, each of about 50 acres, were complete failures.

The affected plants ceased growth when about six inches high and gradually all leaves wilted and died. In some cases regrowth occurred later but was insufficient to produce a worthwhile crop. The cortex of the roots of the plants was decayed and dark brown to black in colour. Frequently only the stele of the root remained. Nodules were almost entirely destroyed. In most cases the diseased plants occurred in large patches surrounded by healthy plants, but in some fields the entire crop was affected.

Examination of the roots of diseased plants showed abundant oospores of Aphanomyces and this organism is regarded as the primary cause of the losses. It is many years since this disease occurred to a serious extent in Tasmania, probably due to growers avoiding badly drained areas known to favour the disease and by a tendency to plant later, after the wettest part of the season. This year, however, exceptionally heavy rains occurred in early November and the affected fields were waterlogged for several days afterwards, thus providing ideal conditions for the parasite. The disease become obvious in early December.

The worst affected areas did not always coincide with the portions of a paddock which could be expected to be wettest and healthy peas occurred in areas which were water-logged. Consequently it was felt that some other factor, in addition to wet soil, may have influenced susceptibility. In plants and soil samples taken from healthy and diseased areas on a number of properties, no consistent differences in soil p H, calcium, phosphorus or total soluble salts could be found. However the total potassium content was lower in all Aphanomyces affected plants than in any plant from unaffected areas. Four lots of infected plants showed total $K_2O$ percentages of 0.5, 0.3, 0.2 and 0.4 while four lots of healthy plants showed contents of 1.0, 1.5, 2.3 and 3.4. There is a possibility that root damage following infection resulted in a reduced uptake of potassium, the low contents thus being an effect of the disease. However, as the content of other nutrients in diseased plants was not appreciably altered it is felt that low potassium may predispose plants to Aphanomyces attack. Investigations on the problem are planned.

Department of Agriculture,
Hobart.

- G.C. WADE.

BLACKLEG IN TASMANIAN POTATO CROPS:

In February this year specimens of potatoes showing blackleg symptoms were collected from several properties in the Lilydale area. Among the isolations made from the material were six cultures which, when inoculated into tomato plants, gave rise to blackening of the stem and complete collapse of the plant in four days. One of these isolates was sent to Dr. Mushin at the School of Bacteriology, Melbourne University. Dr. Mushin reported pathogenic, biochemical and serological reactions indicating that the culture "fitted well into the Erwinia group". An antigenic relationship was observed with an E. carotovora culture.

The presence of blackleg has been suspected for many years in Tasmania but this is the first time that the organism has been isolated and positively identified from material collected in this State. Although blackleg symptoms are seen in all the potato growing areas the disease usually does not affect whole crops but occurs in individual plants or groups of plants scattered throughout the paddocks.

Department of Agriculture,
Hobart.

-GWENDA WINGRAVE.

FUSARIUM AND VERTICILLIUM WILTS OF TOMATO:

In root knot control trials last summer the tomato varieties Grosse Lisse, Rouge de Marmande and Pan America were grown in outdoor plots heavily infested with Fusarium oxysporum f. lycopersici and Verticillium dahliae.

The Rouge de Marmande plants were completely destroyed by Fusarium wilt before, or shortly after, the first fruit had ripened and most Pan America plants were seriously affected with Verticillium wilt by the time the third hand of fruit was mature. The variety Grosse Lisse survived to crop maturity though fully susceptible to infection by V. dahliae. This observation further confirms the field resistance of Grosse Lisse to Fusarium wilt during normal seasons and indicates a tolerance of this variety to Verticillium wilt during warmer weather.

Department of Agriculture,
Sydney.

- W. S. SUTTON.

VERTICILLIUM WILT OF TOMATOES ON M.I.A.:

In the past Fusarium wilt Fusarium oxysporum f. lycopersici has affected canning tomatoes, which are grown extensively on the Murrumbidgee Irrigation Areas. During the 1953-54 season Verticillium wilt occurred on an extensive scale for the first time.

The general symptoms were similar to Fusarium wilt except that the staining of the vascular tissue of the stem just above ground level was slightly lighter in colour.

The fungus isolated from infected stems has produced microsclerotia in culture and has been tentatively identified as Verticillium dahliae. This evidence provides a more positive correlation between apricot black heart occurrence and tomato culture, for Hutton (A.P.D.R., 1 : 3 : 41, 1949) identified his apricot isolates as Verticillium dahliae.

During the 1954 summer, particularly in February and March, temperatures were considerably lower than normal as

shown below. It is apparent that the summer was just sufficiently mild to allow Verticillium dahliae to produce symptoms in the main tomato crop.

| Month | Mean Maximum | | Mean Minimum | |
|---|---|---|---|---|
| | 1953-1954 | Normal | 1953-54 | Normal |
| Nov. | 79.7 | 81.2 | 51.4 | 55.6 |
| Dec. | 87.9 | 86.4 | 58.6 | 60.8 |
| Jan. | 89.6 | 88.9 | 65.7 | 63.2 |
| Feb. | 82.2 | 88.7 | 65.7 | 63.4 |
| March | 78.9 | 82.6 | 52.1 | 59.0 |
| April | 73.1 | 72.6 | 51.9 | 51.2 |

Department of Agriculture,
Leeton, N.S.W.

- J. R. MORSCHEL.

## FRUIT.

### BLACK SPOT OF APPLES IN TASMANIA, SEASON 1953-1954:

Black spot was less prevalent than in 1952-53 and crops were of high quality, showing little spray russet or other blemish.

Although the first ascospore discharge occurred earlier than usual (24/9/53) very little spot appeared until late in November, from infections originating during early November, rains. Sturmer was the main variety affected and frequently fruit infection occurred with very little leaf infection.

Thiram was extensively used and there was a marked reduction in the use of lime sulphur. Ziram, S.R. 406 and P.M.F. were also used. The first two gave generally satisfactory results, but P.M.F. sometimes caused a mild leaf mottle and increased fruit russet compared with thiram.

Differences between treatments in the Department's sprays trial were small. Nirit (thio cyano dinitro benzine) at "pink", "Calyx" and "1st cover" gave poorer black spot control than either "black Jack" or lime sulphur at "pink" followed by thiram at "calyx" and "first cover." It was also poorer than Phygon, ziram, P.M.F., P.M.C. S.R. 406 and Quintox. Nirit also gave poorest control of ripe spot (Gloeosporium sp.).

P.M.F., Quintox, P.M.C., ziram and Phygon (in descending order) caused more russet than thiram. Neither lime sulphur nor "black Jack" at "pink" caused a significant increase in russet. P.M.F., P.M.C. and Quintox were the only fungicides which russeted severely enough to cause a significant reduction in "fancy" grade fruit.

"Black Jack" at "pink" again gave good control of powdery mildew (Podosphaera leucotricha). The incidence of this disease increased on susceptible varieties such as Jonathan when sulphur was completely replaced by organic fungicides. Phygon and Quintox were the only fungicides to cause a significant reduction in Sphaeropsis leaf spot. No fungicide had a significant effect on fruit size or preharvest drop.

Department of Agriculture,
Hobart.

- J. R. WARD.

APPLE MOSAIC:

The suggestion of L.L. Stubbs and P.T. Jenkins (A.P.D.R., 6: 2: 24, 1954) that symptom expression of apple mosaic may be favoured by high temperatures was noted with interest, for the writer had, from last season's observations, formed the opposite opinion.

In New South Wales last season apple mosaic symptoms were so much more pronounced than usual, especially in coastal regions and on the eastern fringe of the tablelands, that growers became alarmed at the apparent rapid spread of this disease. Although some natural spread may be occurring and while the disease is almost certainly being more and more widely distributed by nurserymen, it is felt that last season's apparent higher incidence of the disease was due to environmental conditions which were more than usually favourable for symptom expression. The most obvious variation from normal environmental conditions in the above areas was low spring temperature; and field evidence suggested that symptom expression waned as temperatures rose in early summer.

Department of Agriculture,
Sydney.

- K.E. HUTTON.

CONTROL OF BLACK SPOT OF PEARS IN TASMANIA 1953-1954:

An orchard trial for control of black spot of pears (Venturia pirina) was carried out at Triabunna on the variety Glou Morceau. A "green tip" spray of 6.4.40 Bordeaux misture was followed by six different schedules.

| Treatment | Finger | White Bud | Calyx | 1st Cover | 2nd & 3rd Covers |
|---|---|---|---|---|---|
| A | Thiram | - | Thiram | Thiram | Thiram |
| B | - | Thiram | " | " | Colloidal Sulphur |
| C | Thiram | - | " | " | " " |
| D | Bordeaux 3.2.40 | - | " | " | Thiram |
| E | Bordeaux 3.2.40 | - | " | " | Colloidal Sulphur |
| F | S.R.406 | - | S.R.406 | S.R.406 | " " |

Bordeaux mixture 3.2.40 at "finger" gave better control of black spot than thiram when colloidal sulphur was used as a "cover" spray, but the difference was not significant when thiram was used throughout. (i.e. E better than C but D not better than A). S.R. 406 gave satisfactory control.

Thiram gave better control at "white bud" than at "finger". The gap between "finger" and "Calyx" appears too long except where the more tenacious Bordeaux mixture is used. From the experimental results it appears that if thiram is used, the maximum gap between sprays should be a fortnight. If a "finger" stage spray is applied, then a thiram application will be necessary at full bloom and another at late "calyx". If spraying is delayed until "white bud" then an early "calyx" spray should be applied and followed by the usual "cover" sprays.

It has become obsolete to recommend spray applications according to the stage of development of the tree, for the new non-phytotoxic fungicides can be applied at any time. The Tasmanian Department of Agriculture has eliminated the term "calyx" from its fungicide recommendations. Under Tasmanian conditions, thiram applications should be commenced two to three weeks after the "green tip" Bordeaux mixture spray and continued every fortnight.

Department of Agriculture,
Hobart.

- J.R. WARD.

PEAR BLAST:

Pear blast (Pseudomonas syringae van Hall) occurred throughout the Orange district of New South Wales last season, especially on the variety Packham's Triumph. On trees of this variety, which had received a complete black spot (Venturia pirina) schedule, including Bordeaux mixture 15-15-100 at "green-tip" and again at "spur-burst", the following symptoms were observed:-

Bud blight. Buds swelled but failed to open. Bacterial invasion progress back to the spur.

Blossom blight. Some blossom clusters partially opened then died back, becoming sticky. Bacterial invasion progressed back into the spur.

Spur blight. Spurs were invaded to varying degrees through buds and blossoms. On spurred laterals one or more spurs were sometimes killed.

Fruit lesions. Black sunken irregular lesions occurred on many of the young fruits mostly at the calyx end. Black ill-defined lesions were observed on fruit stalks.

Shoot lesions. Superficial black elongated lesions often with transverse cracking of bark were fairly numerous on current season's growth. These lesions, which contained masses of bacteria, frequently caused laterals and leaders to curve towards the lesioned side.

Leaf lesions. These were black, irregular in size and rather angular, but were not numerous.

This disease is believed to be partly responsible for the extraordinarily low yield of Packham's Triumph pears at Orange last season.

On at least three occasions in recent years Ps. syringae has caused severe blighting of Keiffer pear seedlings in nurseries. At Orange in November, 1948, a bed of pear seedlings was destroyed and at the same time the organism caused widespread infection on cherry fruit while lilacs and a lemon tree were also severely attacked. At Batlow, in 1944, a nurseryman reported at 10% loss of Keiffer seedlings and in November, 1946, he sustained approximately 50% loss of seven weeks old Keiffer seedlings raised from the seed of pears obtained from Victoria. Adjacent seedlings originating from local Keiffer pears were unaffected. The nurseryman reported that of the Victorian pears, which had been cool stored and were in good condition, "many had hardened, blackened areas on skin and flesh at the calyx end."

The disease has probably been present in New South Wales for many years and much of the bud blighting which, in the past, was regarded as a manifestation of boron deficiency, may have been due to infection by Ps. syringae.

Department of Agriculture,
Sydney.

- K.L. HUTTON.

SHOT HOLE OF APRICOT:

On the Murrumbidgee Irrigation Areas there are two distinct diseases of Trevatt apricot both of which are known locally as shot hole. One is shot hole caused by the fungus Clasterosporium carpophilum and the other a shot-hole-like condition.

This latter condition appears on both sprayed and unsprayed fruit early in the season, the symptoms varying from a pepper-like spotting to spots 0.5 mm. in diameter. The lesions are mainly confined to the exposed side of the fruit and during the final ripening process, commencing early in December, they slough away to leave unblemished fruit at harvest time. The cause of this condition is unknown.

At present there is no reliable field method of distinguishing shot hole from the shot-hole-like condition early in the season. However the presence or absence of shot hole on the leaves may be an indication of control of C. carpophilum.

Some preliminary data suggest that improved control of shot hole may be obtained by delaying the semi-dormant spray until 20% of the blossoms are open. Further investigation of this aspect is being carried out this season.

Department of Agriculture,
Leeton, N.S.W. - J.R. MORSCHEL.

LEAF CURL OF STONE FRUIT:

Leaf curl is an annual trouble on peaches and nectarines in Tasmania, but this year the infection was much more severe than usual. Almonds and apricots also showed infection.

In many cases peaches were so heavily attacked that young laterals were killed, and the damage was particularly important on young trees. Nectarines frequently showed severe fruit infection and the badly distorted fruit was worthless.

Attack on apricots is not a common phenomenon in Tasmania, but this year it was very widespread. Usually all leaves on the infected lateral were completely thickened and fleshy and the stems were also thickened. Such shoots made no normal growth and usually died by mid-summer. No case of fruit infection of apricot was noted.

Department of Agriculture,
Hobart. - G.C. WADE.

ORNAMENTALS.

ANTIRRHINUM RUST:

Specimens of Puccinia antirrhini were received in mid-June from Gatton, about 55 miles from Brisbane.

Department of Botany,
University of Queensland. - R.F.N. LANGDON.

VIRUS DISEASES OF SOME ORCHID HYBRIDS:

The prevalence of intergeneric hybrids amongst orchids appears to have resulted in a wide range of symptom expression to their virus diseases. Recently a specimen of a species of Brassolaeliocattleya, a trigeneric hybrid, having extensive sunken necrotic areas on both leaf surfaces and some internal necrosis of mesophyll tissue, was obtained. Sap transmissions made to Datura stramonium produced small necrotic local lesions after 10 - 14 days.

Sap transmissions to Datura stramonium from a plant of Odontioda zizette, a bigeneric hybrid, whose leaves showed chlorotic and necrotic streaking and from leaves of a plant of Odontoglossum vuylstekera with a water-soaked chlorotic mottle, necrotic line pattern and necrotic spots, resulted in the production of local lesions.

In all three cases the symptoms on Datura stramonium were similar to those recorded by N.H. White (A.P.D.R. 6: 1: 11-12, 1954) for Cymbidium mosaic virus. No records of virus diseases of Brassolaeliocattleya or Odontioda orchids could be found but Jensen (Phytopathology 41: 648 - 653, 1951) has described a ring spot virus disease of Odontoglossum orchids the symptoms of which in no way resemble those of the plant examined.

Work is proceeding to establish the identity of the virus on these and other hosts.

Faculty of Agriculture,
University of Sydney. - D.J. GOODCHILD.

MISCELLANEOUS PLANTS.

AN UNUSUAL DIEBACK IN MONTEREY CYPRESS:

In the autumn of this year an unusual dieback involving the terminals of a few, or in some cases, as many as ten or twelve branches, on the eastern side of Moneterey Cypress, Cupressus macrocarpa, (syn. C. lambertiana) of ages 16-24 years,was reported from the Melbourne and Metropolitan Board of Works Farm, Werribee.

Examination of material submitted by the Farm gave no evidence of insect damage or pathological cause. Dieback specimens presented a typical deep reddish brown section of dead leader tissue, branchlets and leaflets, the affected area varying in length from 12" to 30". The extent of dieback was clearly defined and the stem and foliage tissue beyond the affected zone appeared healthy and undisturbed.

A survey of Cupressus lambertiana plantations on the Farm in early May gave conclusive evidence that damage was restricted to the eastern side of the trees. Wherever Lambertianas were protected by buildings, or other trees, or did not present an eastern aspect, dieback was not found. Such factors as water table effect, hydrogen sulphide damage, and other possible causes could not be correlated with this dieback. In June the survey was extended to the South Werribee area where exactly the same problem was again presented by plantations on the coast and up to four and five miles inland. At this time healthy new growth was seen coming from below the end of the dieback section on many trees.

Meteorological data made available by the nearby R.A.A.F. Station, Laverton, indicated the occurrence of hot easterly winds during two periods of dry weather, each of a few days duration, in January. This leads to one possible explanation on the basis of a temporary moisture stress of the trees set up under summer drought conditions. Hot winds bearing on the eastern side of the trees may have induced excess transpiration in tissues normally not conditioned to the same extent as those tissues on the prevailing weather sides of the tree.

If this is so, cell destruction and burn would follow, but symptom manifestation as dieback could well be delayed some weeks.

Department of Agriculture
Melbourne.

- R.D. ANDERSON.

WILT OF LEMON SCENTED GUM:

Recently severe wilting of a young lemon-scented gum (Eucalyptus citriodora) occurred at Burwood near Sydney. The seeding had been planted in ground which had previously grown dahlias. Isolations from young branches showed Verticillium dahliae Kleb. to be present. No wilt disease had been observed in the dahlias.

Department of Agriculture,
Sydney. - J.M. FISHER.

RUST ON EUPHORBIA PEPLUS:

In May 1954 a rust on Euphorbia peplus was collected from the Brisbane area. A comparison of this rust with material from Sydney shows that it is the same rust as recorded by Finlay and by Fraser (A.P.D.R., 6:1:14, 1954).

Department of Botany,
University of Queensland. - R.F.N. LANGDON.

## MISCELLANEOUS NOTES.

### CONTROL OF DAMPING OFF IN SEEDLING BOXES:

Damping off in seed beds and in seedling boxes after "pricking out" was very prevalent in Melbourne seedling nurseries this year. The following fungicides were used in two controlled experiments at one nursery.

1. Captan..... 4 lb. per 100 gal.
2. Zineb ..... 3 lb. per 100 gal.
3. Phenyl mereuric fixtan..... 1 lb. per 100 gal.
4. 8 hydroxy quinoline sulphate.. 1 lb. per 100 gal.

(All concentrations except No. 4 refer to the formulated product)

In the first experiment unsterilised soil in the seedling boxes was watered with these fungicides before pricking out the seedlings.

In the second experiment the seedlings were watered after pricking out into the boxes, which contained unsterilised soil from the same heap as used in experiment I.

In both experiments the seedlings came from outdoor beds affected by Pythium sp.

Zineb watered onto the plants was the only effective treatment the control being so outstanding that all seedlings subsequently "boxed off" in the nursery were treated with this chemical. Although thousands of seedlings were "boxed off" into unsterilised soil, losses from Pythium were virtually eliminated. Previous losses had been approximately 20-30% of transplanted seedlings. The seedlings treated included Iceland poppies, pansies, violas, stocks, primulas and cinerarias.

Approximately 1% of the treated seedlings were destroyed by Rhizoctonia solani. The symptoms produced by this fungus were browning of the roots and slow wilting as distinct from the sudden collapse caused by Pythium.

An attempt was made to reproduce the above results using steam sterilised soil artificially infested with Pythium. However, under such favourable conditions for the fungus, sineb did not prevent damping off in stock and pansy seedlings.

Department of Agriculture,
Melbourne. - R.H. TAYLOR.

NOMENCLATURE OF PLANT PATHOGENIC BACTERIA:

The instability of the nomenclature of plant pathogenic bacteria continues to create confusion, and I am therefore raising this matter in the hope that resulting contributions from others may establish uniformity within Australia.

Not having specialised as a bacteriologist I feel diffident about giving an opinion on what the generic names should be. However, it appears that the genera Corynebacterium, Pseudomonas and Xanthomonas as defined by Dowson have been generally accepted. The main confusion lies in the choice between "Bacterium" and "Erwinia". The concept of the genus seems to have received general acceptance and only the name used for it is still subject to discussion. In my opinion Erwinia seems preferable since Bacterium has been used so loosely in the past. However, I would be happy to accept another opinion if it would establish uniformity.

Regarding specific names I would be interested in opinions on the name to be adopted for the blackleg of potato organism. Do we call it Erwinia (or Bacterium) carotovorum, or E. atroseptica?

Department of Agriculture,
Hobart.

- G.C.WADE.

ERROR IN PAGINATION - A.P.D.R., Vol. 6, No.2, 1954:

An error in pagination occurred in the previous number of A.P.D.R. This number covered pages 20 to 32, not 1 to 13 as indicated. In order to facilitate future reference to this volume it is suggested that these pages be renumbered.

- EDITOR.